REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 3, 16 and 22-33 were pending. By the present response, claims 16 and 23 have been amended, claims 30-33 canceled and claim 34 added. Thus, upon entry of the present response, claims 3, 16, 22-29 and 33 are pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: Figure 2, and the original claims.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

Claims 3, 16 and 22-29 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,278,400 to Yamarik et al. (hereafter "*Yamarik et al.*") on the grounds set forth on page 4 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

As evident from the above, claim 30 has not been rejected on the basis of *Yamarik et al.* By the present response, the subject matter of claim 30 has been combined with claim 16. Thus, the above-noted grounds for rejection have been obviated.

Claims 3, 16 and 22-33 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,347,923 to *Semmler et al.* (hereafter "*Semmler et*

al.") on the grounds set forth on page 5 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to a component of a fluid-flow machine. A component constructed according to the principles of the present invention provides both a construction that facilitates inspection as well as reducing the danger of blockage of coolant holes by dust or other debris in the coolant flow. According to the present invention, through a combination of careful sizing and positioning, an inspection access aperture can also serve as a dust discharge aperture, thereby eliminating unnecessary apertures which can lead to undesired loss of cooling medium, thereby resulting in a loss of efficiency of the component. See, e.g. paragraph [0008] of the present specification.

A component constructed according to the principles of the present invention is set forth in claim 16. Claim 16 recites:

> *16. A component of a fluid flow machine, the component comprising:*
> *a blade having a foot portion, and wherein a coolant medium is introduced into the blade through a single passage disposed in the foot portion.*
> *a leading edge and a trailing edge;*
> *a first coolant passage comprising at least one curved flow section configured to curve in a first flow direction to establish coolant medium flow in the first flow direction; and*
> *a second passage, the second passage (i) branching off the coolant passage at the curved flow section and (ii) being arranged to extend in the first flow direction along a flow path which is tangential to the curved flow section; and*
> *a dust discharge aperture in communication with the second passage having a longitudinal axis essentially parallel to an axis of the fluid flow machine, the dust discharge aperture arranged at the trailing edge of the component and dimensioned to enable the introduction of a borescopee through the dust discharge aperture.*

Semmler et al. is directed to a coolable blade for a gas turbine. *Semmler et al.* teaches a blade construction which provides for additional cooling of the blade tip, particularly at the trailing edge thereof. However, *Semmler et al.* fails to anticipate the component set forth in claim 16.

As evident from the above, claim 16 requires, *inter alia*, a dust discharge aperture that is arranged at the trailing edge of the component and dimensioned to enable the introduction of a borescope through the dust discharge aperture. *Semmler et al.* fails to anticipate at least these aspects of the presently claimed invention.

It is alleged on page 6 of the Official Action that: "a borescope is capable of being introduced through the second passage due to the relatively large dimension of the exhaust-exit port at the end of the second passage (42), the second passage, and the through passage (36). These assertions are respectfully traversed.

First, the exhaust/exit port at the end of the second passage illustrated in Figures 1-4 of *Semmler et al.* is in the form of an elongated narrow slot. See, e.g., col. 3, line 63. Such slots, while having a relatively long radial dimension, have a very narrow transverse dimension. For instance, the width of such slots is typically on the order of 4mm. This is the same discharge slot configuration described by element 64 in *Yamarik et al.* As such, the relatively narrow transverse dimension of the slot precludes the insertion of a borescope therethrough. Borescopes typically have a transverse dimension on the order of 8mm. Obviously, if a borescope cannot pass through the slot along the trailing edge, it can never even reach the second passage (36). Nothing disclosed in *Semmler et al.* leads to any different conclusion.

Second, the second passage identified in the grounds for rejection contain cooling elements, such as pins (56, Figure 3) or ribs (52, Figure 4) which would clearly hinder the insertion of a borescope and movement through the second passage. Third, it is alleged on page 6 in a conclusory fashion that a borescope is capable of being inserted through the passage 36 of *Semmler et al.* Passage 36 of *Semmler et al.* is described as being provided for the purposes of diverting a cooling medium therethrough. Thus, passage 36 is clearly dimensioned as a typical cooling hole would be in such blade configurations. As such, these cooling holes are typically not dimensioned in a manner which would permit the insertion of a borescope therethrough. In this regard, it is additionally noted that the coolant passage (36) disclosed in connection with the embodiment of Figure 4 includes a tapered cross-section such that it presents an even smaller opening through which a borescope would need to pass in order to provide for the passage of a borescope as alleged.

It is further alleged on page 6 of the Official Action that:

> Semmler is silent as to the affect that the second passage has with respect to dust in the coolant medium. However, it is inherent that the arrangement of Semmler would act such that through passage (36), second passage (42) and the exhaust/exit port at the end of the second passage (42) discharged dust from the coolant medium, as evidenced by Schwarzmann et al. (4,775,296).

This assertion is respectfully traversed. Applicants agree that *Semmler* fails to disclose, or even suggest, that any of the through passage 36, second passage 42, or exit slot disclosed by *Semmler et al.* is capable of functioning in the claimed manner so as to provide for the claimed dust discharge advantage of the presently claimed invention.

However, contrary to the above quoted assertion, *Schwarzmann et al.* does nothing to cure this deficiency. As previously noted above, claim 16 requires that the dust discharge aperture be arranged at the trailing edge of the component. The grounds for rejection appear to rely upon a teaching contained in *Schwarzmann* with respect to an aperture 72 described therein. However, the aperture 72 of *Schwarzmann* is not arranged at the trailing edge of the component as required by claim 16. Therefore, functionality of a through hole 72 described by *Schwarzmann et al.* is not relevant to the functionality of a completely different component (i.e., "the exhaust/exit port at the end of the second passage (42)" of *Semmler et al.*) This is especially true given the completely different cross-sectional configuration of a through hole (e.g. 72) and a radially elongated slot (e.g., the exhaust/exit port). The attempt at comparison is one of apples with oranges and does not support a finding of inherency.

Moreover, the through hole 72 cannot even be compared with the through holes 36 of *Semmler et al.* This is because the through holes (72) of *Schwarzmann et al.* have a completely different cross-sectional configuration than the through holes (36) of *Semmler et al.* Namely, the through holes 72 of *Schwarzmann et al.* appear to be essentially cylindrical and of constant cross-sectional shape from one passage to another. By contrast, the through passage (36) described by *Semmler et al.* does not possess a constant cross-sectional configuration, instead it is tapered such that the opening at its exit is significantly smaller than the opening at its entrance. This tapered configuration clearly would inhibit the passage of debris or dust therethrough. Thus, the functionality of a completely differently configured through

hole 72 cannot be analogized with the functionality of through passages (36) of *Semmler et al.*

For at least the reasons noted above, the admitted deficiencies of *Semmler et al.* are not inherent, and the teachings of *Schwarzmann et al.* do nothing to demonstrate otherwise.

For at least the reasons noted above, reconsideration and withdrawal of the rejection is respectfully requested. The remaining claims depend from claim 16. Thus, these claims are also distinguishable over *Semmler et al.* for at least the same reasons noted above.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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